

Name: **K. Aruna Kumari**

Designation: Assistant Professor

Department: Electronics & Communication Engineering

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Experience (in years): Teaching: 18.5 Research: Nil Others (If any, Specify): Nil



1. Educational / Technical qualifications:

S.No	Level (UG / PG / Ph.D)	Year of passing	Specialization
1	Ph. D	Pursuing	Computer Vision Using Deep Learning Techniques
2	M.Tech	2006	Digital Systems and Computer Electronics
3	B. Tech	2000	Electronics & Communication Engineering

2. Teaching and Learning:

2.1. Electronic Devices, Linear and Digital IC Applications, Pulse and Digital Circuits, Network Security and Cryptography, Communication Theory, Signals and Systems, Digital Image Processing, Wireless Sensor Networks, Programming Data Structures and Algorithms using Python, MATLAB Programming, Introduction to Machine Learning

2.2. Novel Teaching & Learning Techniques adopted: Active learning methods like POGIL, WIT & WIL, Lab protocol, group tasks, etc.

2.3. Involvement in curriculum updating / Design: Have designed syllabus for subjects like Linear and Digital IC Applications, Network Security and Cryptography, Pulse and Digital Circuits, Digital Image Processing.

3. Co-curricular and Extra-Curricular Activities

3.1. Interests and Hobbies: Reading Books Learning new Technologies, Cooking, Visiting new places

3.2. CCA/ECA Organized:---

3.3. CCA/ECA participated:----

3.4. Counseling and Mentoring Activity: BTech student mentoring and Counseling MTech Students when necessary.

3.5. Committees involved in:

Department level: Alumini Coordinator, NPTEL coordinator, Lab Incharge, Member student progression

Institute Level:

4. Conference / Workshop / Seminar / Guest Lectures:

4.1. Conducted:

- Conducted workshop on Analog System Design using ASLKV2010 starter kit(14/02/2013 to 16/02/2013) in VNRVJIET.
- Conducted " TI Analog Design Contest-2014" in VNRVJIET.
- Conducted workshop on " Internet of Things" during IACC 2017.
- Conducted guest lecture on the topic "Mobile Architecture Beyond 3G systems".
- Coordinated FDP on "Cyber Security" organized by Departments of ECE & IT in collaboration with IETE, ISTE and ACM Student chapters from 02-06-2020 to 06-06-2020.

4.2. Attended:

- Attended Short Term on course on Teaching Methodology at VNR VJIET.

- Attended workshop on SILVACO TOOLS at JNTUH, Hyderabad.
- Participated in the Short Term Orientation Program, organized by Academic Staff College of JNT University, at VNR VJIET.
- Attended workshop on Multirate Signal Processing at VNR VJIET.
- Participated in the AICTE sponsored staff development program on real time signal and image processing.
- Attended international workshop "REIMAGINE STEM "held on 5-7th August, 2013 at VNR VJIET.
- Attended workshop on Cloud Computing at VNR VJIET.
- Attended workshop on Embedded Systems and Linux at VNR VJIET.
- Attended ART of TEACHING workshop at VNR VJIET.
- Attended AICTE FDP on "Recent Trends in Wireless Communications and Evolution of Simulation Tools", conducted by ECE Department VNR VJIET.
- Attended FDP on " Digital Image and Video Processing with Hands on" at MVSR engineering college on 4th to 8th Jan 2016.
- Attended "Machine Vision and Learning Spring School-2016" at IIT Kharaghpur during 5th and 6th March 2016.
- Attended the workshop on Cloud Big Data Analytics with Microsoft Azure Machine Learning and Power BI Tools.
- Attended the workshop titled Digital Design Through Arduino organized by IIT Hyderabad Teaching Learning Center on 16th June 2016 at VNR VJIET.
- Attended the workshop on "Recent trends in Signal Processing and its Applications" organized by the E & ICT Academy, NIT, Warangal at VNR VJIET, Hyd from 22nd June - 1st July, 2017.
- Attended FDP on "Research Trends in Digital Image & Video Processing" organized by department of ECE, MGIT, Hyd from 4th to 16th December, 2017
- Attended FDP on "ANN and Deep Learning" Electronics and ICT Academies at NITWarangal from 11th June - 15th June, 2018 in the department of ECE, MGIT, Hyd from 4th to 16th December, 2017.
- Attended a two day workshop on IoT and Drones organized by AI Group of VNR VJIET in association with leadingindua.ai of Bennet University and IEEE Student Branch at VNRVJIET during 26th Jan to 27th Jan, 2019.
- Attended Faculty Awareness Programm on Contemporary Research and IPR conducted by ECE department, JNTUH-CEH in association with department of ECE, MGIT, Hyd from 4th to 16th December, 2017.h Motihari College of ENgineering and Shri Mata Vaishno Devi University from 28th Jan - 1st Feb, 2019 .
- Participated attend the Faculty Development Program on “Deep Learning and it’s Applications” organized by Electronics & ICT academy, NIT Warangal at Vasavi College of Engineering, Hyderabad from 25th to 30th November, 2019.
- Attended the AICTE Training and Learning Academy (ATAL) Faculty Development Program (FDP) on Artificial Intelligence from 11th to 15th May 2020 at Maulana Azad National Institute of Technology Bhopal, MP.
- Participated and completed successfully AICTE training and Learning (ATAL) Academy online FDP on “Computer Science and Biology” from 2-11-2020 to 6-11-2020 at Mangalore University.

5. Academic Contribution and Research & Consultancy:

- 5.1. Invited Lectures: Guest Lecture on “Python Programming” for UG and PG students
- 5.2. Articles/Chapters published inBooks:

- Chapter “A Deep Learning Approach for Segmenting Time-Lapse Phase Contrast Images of NIH 3T3 Fibroblast Cells” published in the Springer book “New Trends in Computational Vision and Bioinspired Computing”, September 2020.
- Published a book chapter titled "3D Tumor segmentation using surface rendering technique", in Communication and Computing Systems, 22 October 2019.
- Chapter “Image Enhancement with Deep Learning and Intensity Transformation of No-Reference Grayscale Fluorescence Microscopy Images” published in Springer book “ Proceedings of International Conference on Recent Innovations in Computing”, May 2023.

5.3. Books published as single author or as editor:---

5.4. Projects Guided:

a) UG: 16

b) PG: 8

5.5. Research Interests: Digital Image processing, Computer Vison, Deep Learning

5.6. Ph.D students: NIL

5.7. Papers published in reviewed Journals:

S.No	Title of the Paper	Journal Name Vol.No. PP	ISBN/ISSN No.	Impact Factor/ Citation Index	National/ International
1	BRB U-Net: Bottleneck Residual Blocks in U-Net for Light-Weight Semantic Segmentation	International Journal of Computer Applications. Volume: 184, Issue: 33	0975-8887	0.745	International
2	BRB U-Net for Instance Segmentation of Cells in Microscopy	International Journal of Advanced Research in Computer and Communication Engineering. Volume:11, Issue: 11	2278-1021	8.102	International
3	Deep Learning Architecture for classification of Breast cancer Cells in Fluorescence Microscopy Images	International Journal of Advanced Research in Computer Science. Volume:13, No. 6	0976- 5697	7.146	International
4	Haze-level prior approach to enhance object visibility under atmospheric degradation	Turk J Elec Eng & Comp Sci, Vol. No: 29, Number: 2	1300-0632	0.703	International (SCI)
5	A High Speed VLSI Architecture for	IJSR,	2319-7064	4.43	International

	Computation of 2D Discrete Wavelet Transform	Vol. No.:4 Issue:1 Feb 2015			
6	Microarray image Denoising using Independent Component Analysis	IJCA, Vol.No1 No 11 2010	2250-1797	3.12	International

5.8. Papers presented at National / International conferences:

S.No	Title of the Paper	Names of the Conference/ Seminars	National/ International	Period
1	Design and Development of an Embedded Smart Car Security and Theft Control System	ICMAC-2010	International	20, 21st Dec 2010
2	Design and Implementation of Vehicle Gaseous Fuel Leakage Detection Using GSM	ICAET-2011	International	28-05-2011
3	Brain Machine Interface for Wrist Movement Using Robotic Arm	CCSN-2015	International	24 th and 25 th Dec 2015
4	Implementation of Face Recognition System using ARM7	IACC 2017	International	5 th Jan to 7 th Jan 2017
5	A Deep Learning Approach for Segmenting Time-Lapse Phase Contrast Images of NIH 3T3 Fibroblast Cells	ICCVBIC 2018	International	29 th to 30 th Nov 2018
6	3D Tumor segmentation using Surface Rendering Technique	ICCCS 2018	International	1 st to 2 nd Dec 2018
7.	Development and Analysis of Pothole detection and Alert based on NodeMCU	Ic-ETITE-2020	International	24 th to 25 th Feb 2020
8.	Object Detection and Tracking for Community Surveillance using Transfer Learning	ICICT- 2021	International	20-1-2021
9.	Segmentation of Cell Nuclei in Microscopy Images using Modified ResUNet	3 rd GCAT	International	7 th 9 th Oct 2022
10.	Semantic Segmentation of Cells in Microscopy Images via Pretrained Autoencoder and Attention U-Net	MLCSS 2022	International	5 th -66 th

				Aug 2022
11.	Image Enhancement with Deep Learning and Intensity Transformation of No-Reference Grayscale Fluorescence Microscopy Images	ICRIC 2022	International	Aug 14 th 2022

5.9. Sponsored research Projects:

S.No	Title	Agency	Period	Grant amount	Ongoing / Completed

5.10 Consultancy Projects:

S.No	Title	Agency	Period	Sanctioned Amount	Ongoing / Completed

6. Awards / Honors received:

1. Received appreciation letters for 100 % pass percentage a number of times.
 2. Secured 81.82 percentile in Electronics & Communication Engineering in GATE 2003.
 3. Secured ELITE Score in Programming Data Structures and Algorithms using Python (NPTEL Feb-March 2018).
 4. Stood in Top 5% for the course Introduction to Machine Learning (NPTEL Jan-April 2018).
 5. Secured ELITE Score in MATLAB Programming for Numerical Computation (NPTEL Feb-March 2018).
 6. Completed certification LaTeX101x: LaTeX for Students, Engineers and Scientists, a course of study offered by IITBombayX, an online learning initiative of IIT Bombay. (edX Course)
 7. Completed certification the course Image Processing and Analysis for Life Scientists, offered by The École polytechnique fédérale de Lausanne (EPFL) is a research institute and university in Lausanne, Switzerland, specializing in the natural sciences and engineering. (edX Course)
- 7. Motto:** Try not to become a man of success, rather become a man of value. (Albert Einstein)